

4 - 5 June 2018, Avignon, France

MONDAY JUNE 4TH 2018

08:30 REGISTRATION

09:00 CONFERENCE OPENING

SESSION A Session Chair

Stéphane Gaffet, ⁴LSBB, Aix-Marseille Univ. CNRS, Univ. of Avignon, Univ. of Nice; Rustrel, France

09:30 I1 Large scale atom interferometry with the MIGA gravity antenna

Benjamin Canuel

1LP2N, Laboratoire Photonique, Numérique et Nanosciences, Université Bordeaux--IOGS--CNRS:UMR 5298, rue F. Mitterrand, F--33400

10:00 P1 Design, construction and in situ testing of a muon camera for earth science and civil engineering applications

LAZARO ROCHE Ignacio ^{1,2,3,4}, BITRI Adnand ¹, BOUTEILLE Simon ³, DECITRE Jean B. ⁴, JOURDE Kevin ¹, GANCE Julien ³, TRUFFERT Catherine ³, GAFFET Stéphane ^{2,4}

¹BRGM, Orléans, France, ²GEOAZUR, Univ. of Nice, CNRS, IRD, OCA; Sophia-Antipolis, France.

³Iris Instruments, Orléans, France, ⁴LSBB, Aix-Marseille Univ. CNRS, Univ. of Avignon, Univ. of Nice; Rustrel, France

10:20 P2 RF CMOS Oscillators Design for autonomous connected objects

F. Haddad¹, W. Rahajandraibe¹ and I. Ghorbel¹

¹Aix Marseille University, CNRS, University of Toulon, IM2NP UMR7334, Marseille, France

10:50 Coffee Break

SESSION B Session Chair

Ignacio Lazaro Roche, BRGM, Orléans, France, GEOAZUR, Univ. of Nice, CNRS, IRD, OCA; Sophia-Antipolis, France. Iris Instruments, Orléans, France, LSBB, Aix-Marseille Univ. CNRS, Univ. of Avignon, Univ. of Nice; Rustrel, France

11:10 P3 Development of asynchronous hybrid SQUID operating in unshielded environment

U. Yilmaz ¹, S. Razmkhah ^{1,2}, A. Bozbey ², P. Febvre ¹

¹Université Savoie Mont Blanc, IMEP-LAHC, 73376 Le Bourget du Lac, France, ²TOBB Economy and Technology University, Ankara, Turkey

11:30 P4 Contribution to the modeling and the mechanical characterization of the subsoil in the LSBB environment

H. Bouare, A.Mesgouez & G. Lefeuvre-Mesgouez

Université d'Avignon et des Pays de Vaucluse, UMR EMMAH, Faculté des Sciences, 33 rue Louis Pasteur, F-84000 Avignon, France

11:50 P5 SITARE : A Fast simulation tool for the analysis of disruptive transient effects on electronics

Gilles Micolau¹, Karine Coulié², Wenceslas Rahajandraibe², Jean-Michel Portal², Hassen Aziza²

¹EMMAH, UMR 1114, INRA-Université d'Avignon et Pays du Vaucluse, ²Aix-Marseille Université, IM2NP UMR7334, Marseille, France

12:10 Lunch

SESSION C Session Chair

Pascal Febvre, ⁵IMEP-LAHC, USMB, F-73376 Le Bourget du Lac

- 14:00 I2 Le plateau d'Albion, territoire de la dissuasion nucléaire (années 1960- années 1990)**
Frédéric Monier
Université d'Avignon, centre N. Elias (UMR 8562 CNRS), 74 rue Louis Pasteur, F-84000 Avignon.
- 14:30 P6 The global network of optical magnetometers for exotic physics searches**
Theo Scholtes¹
¹Physics Department, University of Fribourg, Chemin du Musée 3, CH-1700 Fribourg, Switzerland
- 14:50 P7 INDUCTAN: A simple, robust and fast numerical tool for evaluating the self- inductance of an arbitrarily shaped coil with few windings**
Gilles Micolau, Elisabeth Pozzo Di Borgo¹
¹ Avignon University, EMMAH UMR 1114 INRA-UAPV, 301 rue Baruch de Spinoza, 84000 Avignon
- 15:10 P8 Quantifying rotational seismic measurements derived from the LSBB's dense seismic array using the Spudich method.**
Roxanne Rusch¹, Olivier Sèbe¹, Stéphane Gaffet^{2,3}, François Schindel¹, Jean-Baptiste Decitre², Daniel Boyer², Alain Cavaillou²
¹ CEA, DAM, DIF, F-91297 Arpajon, France, ² LSBB, Aix-Marseille Univ., CNRS, Univ. of Avignon, Univ. Nice - Sophia-Antipolis, Rustrel, France, ³ Géoazur, Univ. Nice - Sophia-Antipolis, CNRS, IRD, OCA, Sophia-Antipolis, France
- 15:30 P9 Acoustic Instrumentation for a Bubble Chamber towards Dark Matters Searches**
M. Reis¹, M. Felizardo¹, A. C. Fernandes¹, A. Kling¹, T. Morlat¹, J.G. Marques¹
¹C2TN, Instituto Superior Técnico, Universidade de Lisboa, E.N. 10 (km 139.7), 2695-066 Bobadela, LRS, Portugal

15:50 Coffee Break

SESSION D Session Chair

Gilles Micolau, Avignon University, EMMAH UMR 1114 INRA-UAPV, 301 rue Baruch de Spinoza, 84000 Avignon

- 16:20 P10 The Whispering karst**
A. Haned¹, C. Champollion¹.
¹Université Montpellier, UMR 5243 (CNRS/UM2) Géosciences Montpellier, Montpellier, France
- 16:50 P11 Time-varying gravity measurements at the low noise underground laboratory (LSBB URL) of Rustrel, France : environmental noise estimate and perspectives**
S. Rosat¹, J. Hinderer¹, F. Littel¹, J.-D., Bernard¹, D. Boyer², Y. Rogister¹ and S. Gaffet²
¹Institut de Physique du Globe de Strasbourg; UMR 7516, Université de Strasbourg/EOST, CNRS, 5 rue Descartes, F-67084 Strasbourg, ²LSBB, La Grande Combe, F-84000 Rustrel
- 17:10 P12 Time-lapse GPR tomography between Buissonnière boreholes (LSBB)**
Belkowiche Natacha², Rousset Dominique¹, Sénéchal Guy¹
¹ CNRS/TOTAL/Univ. Pau & Pays Adour, Laboratoire des Fluides Complexes et leurs Réservoirs-IPRA, UMR5150, Pau, France, ² CSTJF – TOTAL S.A., Pau, France

20:00 GALA DINNER

TUESDAY, JUNE 5TH 2018

SESSION E Session Chair

Karine Coulié, *Aix-Marseille Université, IM2NP UMR7334, Marseille, France*

09:00 I3 General overview on SQUIDS in Geosciences

R. Stolz

Leibniz Institute of Photonic Technology, Albert-Einstein-Straße 9, 07745 Jena, Germany

09:30 P13 A first inventory of the labile biochemicals found in Avignon groundwater: can we identify potential bacterial substrates?

Rousset Ludivine^{1,5}, Gillon Marina², Duport Catherine¹, Clavel Thierry¹, Lagrée Marie³, Traikia Mounir³, Panagiopoulos Christos⁴, Berge Odile⁵

¹ SQPOV, UMR408, Avignon University, INRA-PACA, F-84914 Avignon, ²EMMAH, UMR 1114, Avignon University, F-84000 Avignon, ³Université Clermont, CNRS, SIGMA Clermont, ICCF, F-63000 Clermont-Ferrand, ⁴MIO, Aix-Marseille University, MIO, F-13288 Marseille, 5MISTRAL, INRA-PACA, Plant Pathology Research Unit, F-84143 Avignon

09:50 P14 Acoustical analysis methods for particle physics identification with superheated droplet detectors

M. Felizardo¹, M. Reis¹, A. C. Fernandes¹, A. Kling¹, T. Morlat¹, J.G. Marques¹

¹ C2TN, Instituto Superior Técnico, Universidade de Lisboa, E.N. 10 (km 139.7), 2695-066 Bobadela, LRS, Portugal

10:10 P15 Characteristics of winter lightning in the west mediterranean region

I. Kolmasova^{1,2}, O. Santolik^{1,2}, S. Pedebay³, R. Lan¹, L. Uhlir¹, and A. Kolinska¹

¹ Institute of Atmospheric Physics CAS, Prague, Czechia, ² Faculty of Mathematics and Physics, Charles University, Prague, Czechia, ³ Météorage, Pau, France

10:30

Coffee Break

SESSION F Session Chair

Guy Sénéchal, *CNRS/TOTAL/Univ. Pau & Pays Adour, Laboratoire des Fluides Complexes et leurs Réservoirs-IPRA, UMR5150, Pau, France, ² CSTJF – TOTAL S.A., Pau, France*

11:00 P16 Ultra-low Noise EEG at LSBB: Effective Connectivity Analysis

N. Hamzei¹, J. Steeves², J.L.K. Kramer², M. Yedlin¹, GA Dumont¹

¹ Electrical & Computer Engineering, ² ICORD, The University of British Columbia, Vancouver, BC, V6T 1Z4, Canada

11:20 P17 A Cavity enhanced Atom interferometer for the miga project

Grégoire Lefèvre¹, Joseph Junca¹, Nicolas Mielec², Louis Amand², Thomas Chantrait², David Holleville², Remi Geiger², Arnaud Landragin², Andrea Bertoldi¹, Benjamin Canuel¹ and Philippe Bouyer¹

¹ LP2N, Laboratoire Photonique, Numérique et Nanosciences, Université Bordeaux--IOGS--CNRS:UMR 5298, rue F. Mitterrand, F--33400

Talence, France, 2LNE--SYRTE, Observatoire de Paris, Université PSL, CNRS, Sorbonne Université, 61, avenue de l'Observatoire, F--75014 PARIS, France

11:40 P18 Measurement of the seismic rotational motion induced by the Amatrice (24/08/2016) and Norcia (30/10/2016) earthquakes, Italy, with a single and 3-component prototype of the rotational blueSeis-3A sensor at the Low Noise
Olivier Sèbe¹, Frédéric Guattari², Jean-Baptiste Decitre³, Sébastien Judenherc⁴, Charly Lallemand¹, Stéphane Gaffet^{3,5}, Daniel Boyer³, Alain Cavaillou³, François Schindelé¹
¹CEA, DAM, DIF, F-91297 Arpajon, France, ²iXBlue, Saint-Germain-en-Laye, France, ³LSBB, Aix-Marseille Univ., CNRS, Univ. of Avignon, Univ. Nice - Sophia-Antipolis, Rustrel, France, ⁴Staneo SAS, Toulouse, France, ⁵Géoazur, Univ. Nice - Sophia-Antipolis, CNRS, IRD, OCA, Sophia-Antipolis, France

12:00 P19 Geodetic tools for monitoring groundwater redistributions
M. Mouyen¹, L. Longuevergne¹, K. Chalikakis², N. Mazzilli², C. Ollivier², S. Rosat³, J. Hinderer³, C. Champollion⁴
¹Univ Rennes, CNRS, Géosciences Rennes, UMR 6118, 35000 Rennes, France. ²Université d'Avignon et des Pays de Vaucluse, UMR 1114 EMMAH (UAPV/INRA), Avignon, France. ³Institut de Physique du Globe de Strasbourg, UMR 7516, Université de Strasbourg/EOST, CNRS, 5 rue Descartes, 67084 Strasbourg, France. ⁴Université Montpellier 2 CC 60, UMR 5243 (CNRS/UM2) Géosciences Montpellier, Montpellier, France.

12:20 Lunch

SESSION G Session Chair

Gilles Micolau, Avignon University, EMMAH UMR 1114 INRA-UAPV, 301 rue Baruch de Spinoza, 84000 Avignon

14:00 I4 An in-situ stimulation experiment in crystalline rock – seismo-hydro-mechanical response during hydraulic stimulation tests

J. Doetsch

Department of Earth Sciences, ETH Zurich, Zurich, Switzerland

14:30 P20 EXPLORATION OF THE EARTH MAGNETIC FIELD TRANSMISSION THROUGH THE KARSTIC MOUNTAIN OF RUSTREL

G. Seraut¹, E. Pozzo di Borgo^{2,3}, C. Danquigny^{2,3}, A. Mesgouez^{2,3}, G. Micolau^{2,3}, J.B. Decitre⁴, A.Cavaillou⁴, P. Febvre⁵

¹University of Avignon, F-84916 Avignon, ²UMR1114, UAPV-INRA, EMMAH, F-84914 Avignon,

³UMR1114, INRA-UAPV, EMMAH, F-84914 Avignon, ⁴LSBB, La Grande Combe, F-84000 Rustrel,

⁵IMEP-LAHC, USMB, F-73376 Le Bourget du Lac

14:50 P21 Observations of unusual daytime tweek atmospherics at LSBB

O. Santolik^{1,2}, I. Kolmasova^{1,2}, R. Lan¹, L. Uhler¹

¹ Institute of Atmospheric Physics CAS, Prague, Czechia, ² Faculty of Mathematics and Physics, Charles University, Prague, Czechia

15:10 Coffee Break

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SESSION H Session Chair

Karine Coulié, *Aix-Marseille Université, IM2NP UMR7334, Marseille, France*

15:40 P22 Seismic wavefield characterization by polarization analysis - Optimized time-frequency polarization's representation and quantification for a single 3C station

C. Labonne¹, O. Sèbe², S. Gaffet^{3,4}, F. Schindelé²

¹ *Institut de Physique du Globe de Paris, ²CEA, DAM, DIF, F-91297 Arpajon, France,*

³ *Géoazur, Univ. Nice-Sophia-Antipolis, CNRS, IRD, OCA, Sophia-Antipolis, France,*

⁴ *LSBB, Aix-Marseille Univ., CNRS, Univ. of Avignon, Univ. Nice - Sophia-Antipolis, Rustrel, France*

16:00 P23 A global Model approach of the leakage phenomena in dielectrics

J. Postel-Pellerin¹, G. Micolau², P. Chiquet¹, M. Joelson², J.B Decitre³

¹ *Aix-Marseille University, IM2NP, CNRS, UMR 7334, 5 rue Enrico Fermi, F-13451*

Marseille, ²Avignon University, EMMAH, UMR 1114, INRA-UAPV, 301 rue Baruch de Spinoza,

F-84000 Avignon, ³LSBB, UMS 3538 UNS/UAPV/CNRS/AMU, La Grande Combe, Rustrel, F-84400 Rustrel

16:20 CLOSING REMARKS